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Original Article

The Impact of ESG Reporting on IPO Performance in India's Pharmaceutical Sector in the Pre- and Post-COVID Era

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Abstract *- Investors' growing concern with sustainability and the global impact of firms has led to an increased emphasis on Environmental, Social, and Governance (ESG) factors in investment decisions. This study investigates the influence of ESG disclosure on the performance of Initial Public Offerings (IPOs) within the Indian pharmaceutical sector. In this domain, empirical research is scarce, particularly in the context of pre- and post-COVID-19 periods. The research aims to evaluate how ESG reporting affects IPO listing gains and short-term and long-term performance, thereby addressing a significant gap in the literature regarding the relationship between ESG factors and IPO outcomes. Utilizing a dataset formulated through a 3-step filtration collection process comprising 35 pharmaceutical IPOs listed on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) from 2016 to 2023, the study segregates the data into pre-COVID (2016-2019) and post-COVID (2020-2023) periods to analyze the pandemic's influence on investor behavior. The companies are divided based on their ESG disclosure practices before their IPOs. The findings show that although ESG disclosure has a negligible effect on short-term performance, its effect is significantly positive on long-term performance, especially in the post-COVID era. Moreover, companies that disclosed ESG information during the short-term post-COVID period showed favorable performance compared to those that did not. These results highlight the growing significance of ESG factors in investor decision-making, especially within emerging markets such as India, and emphasize the role of transparent ESG reporting in reducing information asymmetry. The study acknowledges certain limitations, including focusing on a specific sector and geographical region. Future research could benefit from expanding the dataset to encompass various industries and geographic locations and incorporating additional variables to provide a more comprehensive understanding of the evolving dynamics between ESG disclosures and IPO performance.*

Keywords *- Covid-19, ESG Reporting, Indian Stock Exchange, IPO Performance, Pharmaceutical Sector.*

1. Introduction

Initial Public Offerings (IPOs) are a method for privately held entities to go public and openly trade on the stock method. It allows companies to raise significant amounts of capital to fund expansion, research, and development, along with strategic acquisitions.[1] IPOs are essential for increasing the market valuation of companies, deduction in corporate debt and enhancing public profile.[2] The shift from being a private to a publicly traded company increases share liquidity regulatory scrutiny. It helps retain and attract employees due to the stock options and discounted stock purchases.[3] Due to IPOs being heavily impacted by unexpected shocks and events like global crises, outbreaks or even worldwide macroeconomic shifts makes them very volatile. The COVID-19 pandemic was an example of this, significantly impacting major worldwide financial markets, including IPO activities in India. Amongst investors and disruptions, severe volatility and uncertainty led to many companies postponing or canceling their upcoming IPOs.[4] However, companies that showed resilience and long-term sustainability attracted investors as investor focus gravitated heavily towards Environmental Social and Governance (ESG) factors. ESG factors are a set of standards and frameworks based on which a company's social responsibility, environmental impact and corporate governance are measured. Due to increased investor scrutiny, they are becoming ever more vital in operational decisions such as in production and investment decisions to display a commitment to investors on sustainable and ethical business practices.[4] Hence, there has been a growing trend as it has become ever more important for IPOs planning to go public to consider the dynamic change in the landscape and integrate ESG in pre-IPO processes to improve their reputation and visibility once they go public in the post-pandemic environment.[5]

Recent studies show that the influence of ESG reporting on IPO performance was impactful even before the pandemic, but its significance has indeed shown a different trajectory since COVID-19 struck. (Ferri et al. 2023) concluded that disclosing sustainability reports before the launch of IPO reduces underpricing as the company is perceived to be less risky, as investors value the fewer problems now associated with ESG factors.[6] Dasha (2024) reported a similar result of ESG reporting having a positive impact on the financial performance of IPOs in the Russian market.[7] (Fu, Yu, and Zhou 2022) found that voluntarily disclosing ESG reduces the failure of IPOs and benefits long-term performance. They also documented that earlier reporting yields better performances and better chances of survival, and better ESG scores fail less.[8]

On the contrary, while researching the U.S. IPOs, (Fenili and Raimondo 2021) argued that while additional ESG reporting in the S-1 prospectus (*initial registration form to be listed on the stock exchange)* does shrink the information asymmetry present between the company and investors, it also simultaneously negatively impacts the underpricing and Tobin's Q of the company.[9] However, some studies like (Bollazzi et al., 2017) of the Italian Stock Exchange examined that ESG factors have no impact or influence on underpricing and are not considered in offer price determinations.[10] These studies indicate that there exists a knowledge gap for the definitive answer to the influence of ESG reporting on IPO performance, but these studies also tell us that the answer is market and region-specific. Moreover, limited research and studies are comparing ESG impact in the pre-COVID era vs post-COVID context; as mentioned before, the pandemic shifted investors' views and outlooks on ESG consideration entirely when pricing IPOs. Lastly, ESG factors have different amounts of impact and significance on performance in the short term and the long term. Numerous studies have not differentiated between the two, with some only considering the long term while most studies have not even recognized the impact in the short term. Hence, a comparative analysis of the impact across time periods and in short term vs long-term performance is warranted.

Taking all this into account, the importance of this study will help fill in the possible gaps that other studies do not take into consideration. This study aims to measure the impact of ESG disclosure and reporting on the IPO's short-term (3 months) and long-term performance (1 year) in the pre-covid vs post-covid environment. The goal is to help companies planning their IPOs navigate challenges associated with the post-COVID context while informing them about the benefits of ESG reporting, which can be used to predict risk and awards in their financial and public performance. This comprehensive study will be conducted specifically in the pharmaceutical sector of the Indian exchanges, which, although a developing economy and emerging market, have grown to become the fourth largest equity market globally.[11] Limited research exists in this market, and ever since its exponential growth in the last couple of years, older studies cannot be trusted to apply their results to it. Although the dataset of 38 IPOs spans 9 years *(2016-2024)*, it has been symmetrically divided into two separate time periods, which will be analyzed separately and then compared together. A similar number of IPOs exist in both time periods to make it more comparable, along with data from India's stock exchanges, BSE and NSE, which have been considered to not let exchange bias skew the results.

2. Methodology

2.1. Research Aim and Objectives

The primary aim of the study is to recognize the effect of ESG (Environmental, Social and Governance) disclosures on the financial performance of IPOs (Initial Public Offerings) listed on the NSE and BSE belonging to the pharmaceutical and healthcare sector for the study period ranging from FY16 to FY23.

To achieve the above aim, the study concentrates on the following specific objectives:

- Examining and realizing the influence of ESG reporting on listing gains, short-term (*3 months)* and long-term (1 year) performance of IPOs.
- Understanding the role of COVID-19 as a moderating factor on the above prior object due to this study's particular focus on the pharmaceutical sector, which has gone through an exponential rise, especially in the last 2 years due to the increasing demand for healthcare services and innovative treatments. Moreover, the studies done on this sector have not been extensively done in relation to ESG or IPOs.

2.2. Research Design

COVID-19 has significantly shifted investor perspectives and focus in the pharmaceutical sector, mainly in India.[12] There is more draw towards companies demonstrating strong research capabilities, especially in vaccine production and new types of therapies. The pandemic also emphasized the need for supply chain resilience and the requirement for diversification geographically for sourcing raw materials.[13] To add to this, the rise of e-pharmacies and health solutions provided digitally has attracted even further investments, indicating the long-term shift that has occurred after the pandemic due to the pandemic.[14] Hence, this study uses empirical data from pharmaceutical IPOs listed on NSE and BSE, analyzing it through quantitative measures. The data set spans a period from 2016 to 2023, which has been segregated into two different sets, allowing for a comparison between pre-COVID (FY16-FY19) to post-COVID (FY20-FY23) periods.

2.3. Data Collection and Sampling

Using ProwessIQ, an extensive list of 296 pharmaceutical companies listed in India on various stock exchanges was generated. Through specific filtering and categorization, including the necessity for the company to be required to be listed on either NSE or BSE within the study period, the dataset was further narrowed down to 39 companies. Further filtering due to the availability of data on long-term performance reduced the final sample for full analysis down to 35 companies.

Table 1. Filtration process

Steps	Process of Data Collection and Sampling	No. of Companies
Step 1	Generating a list of pharmaceutical companies with the help of ProwessIQ that are listed on India's top two exchanges	239
Step 2	Filtering companies based on listing date on BSE or NSE	39
Step 3	Companies without 1 year or long-term performance data (listed less than a year during the time of study)	35

Other steps were included in Step 1, such as if a company had listed on both exchanges on different dates-then. The earlier data was taken into consideration. If a company's listing date belonged to the time period while another didn't - the listing data part of the time period was taken into consideration. To ensure that the data was accurate and to reduce the risk of arbitrage investing in skewing results, the data extracted was cross-referenced from both NSE and BSE. Any differences or disparities that occurred were resolved by making sure information from the official stock exchanges' websites was prioritized.

2.4. Variables of the Study

The specific objectives that were being analyzed and compared were the listing gain, short-term performance and long-term performance. The short-term period was defined as 3 months after the stock was listed, while the long-term definition was taken as 1 year. The performance metric to define the word "performance" was chosen to be a listing gain.

The 3-month period allowed for the assessment of immediate market reactions that followed the IPO listing. Often, in this sector, investors like to capitalize on listing gains, due to which stocks sometimes experience huge price fluctuations soon after they go public.[15] Keeping this as one of the timeframes will allow the study to capture the initial sentiment of what investors are thinking along with the market dynamics, which have factors such as hype, speculative trading and wide market conditions affecting them.[16]

The 1-year period helps the study to have a more outside view of the company's performance post-IPO. This timeframe was chosen as it evaluates the stability that the stock has and will have along with the growth potential. During a 1-year cycle, a stock goes through different market cycles and economic conditions.[17] The findings also will be significant for investors aligned with this timeframe as it provides them with a difference and distinction between short-term and long-term capital gains practices used for tax savings, which often do influence strategies used by investors.[18]

Below are the respective formulas taken for the study's specific objectives.

$$Listing\ Gain = \frac{Listing\ Day\ Closing\ Price - Listing\ Day\ Opening\ Price}{Listing\ Day\ Opening\ Price}$$

$$Short\ Term\ Performance = \frac{3\ Month\ Closing\ price - \ Listing\ Day\ Closing\ price}{Listing\ Day\ Closing\ price}$$

$$Long\ Term\ Performance\ = \frac{1\ Year\ Closing\ price\ (1y) - \ Listing\ Day\ Closing\ price}{Listing\ Day\ Closing\ price}$$

Taking 2016-2019 as pre-COVID and 2020-2023 as post covid, the 35 companies were divided equivalently into 16 companies for pre-COVID and 19 for post covid. The reason for taking the pre-COVID era to be FY16-F19 stems from the reason that this time period provides a stable base for analyzing the pharmaceutical's performance and its IPOs before the pandemic, while the post-COVID era to be FY20-FY23 helps capture the immediate impacts due to covid and the long term impact of COVID such as a change in investor trends as discussed before.[19, 20] The reason for unequal distribution is that post-COVID, there was an increased activity of IPOs fitting the category being launched.[21]

2.5. ESG Reporting Framework and Data Collection

ESG in this paper's definition was different from the definition given in the introduction. The concept of ESG reporting is well-explored in other markets but is still relatively new in the Indian context. ESG or BRSR (The Business Responsibility and Sustainability Reporting) report was just made compulsory from FY22-FY23.[22.]

Hence, the data presented was very vague and not explicit. Hence, this study created a six-step framework to assess whether a company, prior to the IPO, discloses its ESG. To ensure consistency, the framework was compared to the official ESG parameters to ensure it conveys the same.

Only those companies who met at least one of the above criteria mentioned in the framework before the IPO date were considered in the dataset to have "reported" ESG disclosure.

Table 2. ESG Reporting Criteria and Inclusion Framework for Pre-IPO Disclosure

	Standard ESG Parameters	The ESG criteria of the study	Inclusion/exclusion criteria
1	Official ESG Reports	Verified through BSE/NSE and company websites	Included if released pre-IPO
2	CSR Reports with ESG sections	Verified through company websites and investor relations	Included if released pre-IPO
3	Sustainability mentioned in annual reports	Verified through CSR and shareholder reports	Included if released pre-IPO
4	ESG-themed CSR projects	Verified through company websites/social media	Included if released pre-IPO
5	Mentions of ESG in investor presentations	Verified through investor presentations and briefings	Included if released pre-IPO
6	Inclusion of ESG in company mission or vision statements	Verified through official company documentation	Included if released pre-IPO

3. Results and Discussion

This section discusses the study's findings and investigates the involvement of ESG reporting on IPO performance within the pharmaceutical and healthcare sectors. To provide a comparative evaluation of the impact of the pandemic on investor behavior and, consequently, the influence of ESG factors, the analysis has been divided into pre- and post-Covid periods. An analysis was also done to see the effect of ESG without considering the impact of the pandemic. Supporting literature and interpretations have been provided alongside each of the graphs for a better understanding of the findings in relation to other markets, time periods or variables.

3.1. Gain Type vs Gain Percentage in Pre vs Post Covid Context

As seen in Figure 1, companies in the pre-COVID period had a negative listing gain of -1.69%, while post-COVID companies experienced a positive listing gain of 0.57%. In the short term, pre-COVID companies outperformed with a gain of 13.60% compared to 8.87% for post-COVID companies. However, in the long term, post-COVID companies outperformed even more, with a gain of 17.02%, compared to just 2.53% for pre-COVID companies.

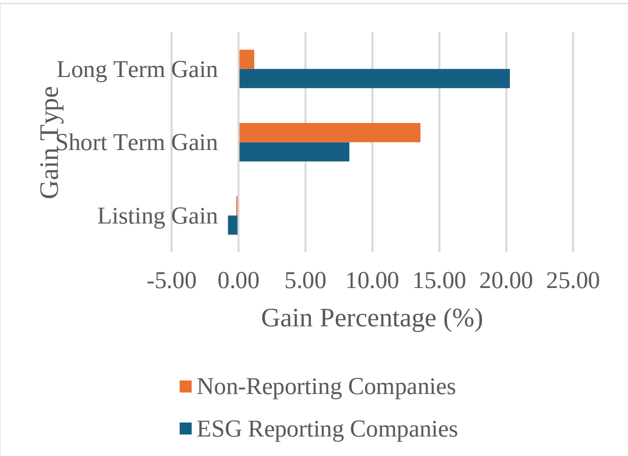

Fig. 1 Gain Type vs Gain Percentage in Pre vs Post Covid Context

This graph shows the shift in performance dynamics, where pre-COVID companies show stronger short-term gains, approximately 1.53 times higher than post-COVID companies. However, in the long term, post-COVID companies exhibit significantly opposite results, achieving a gain approximately 6.7 times higher than pre-COVID companies.

The stronger short-term performance of pre-COVID companies could be due to the relative market stability and investor confidence that existed before the pandemic, which was concluded in the National Library of Medicine's study comparing pre- and post-COVID stock market psychology on consumer goods.[23] However, the graph shows the substantial long-term gains for post-COVID companies reflect a shift in market dynamics, where industries that adapted to new norms like healthcare and sustainability see their fundamentals strengthen. This adaption is described in McKinsey and Company's study on how each industry, sector, and function of the economy will have to reinvent itself due to the pandemic.[24] The pharmaceutical and healthcare sectors may have benefited from increased investor focus on long-term growth[25] and resilience post-COVID, as shown by the significant 6.7x multiplier in long-term gains.

This growth is supported by other reasons extracted in other areas, such as Beninger (2021), who found how the pandemic created opportunities in healthcare, mainly in pharmacovigilance and research collaboration.[26]

This graph also reveals how the pandemic exposed India's chronic underinvestment in healthcare infrastructure, as revealed in the Anand et al. 2021 study.[27] Other studies conducted by Misha et al., 2023[28] and (Dash & Satapathy, 2020)[29] show the surges in stock prices experienced in the pharma sector of India due to the increased demand for pharmaceutical goods.

COVID-19 can be termed a catalyst, which revealed the short-term gain to be linked to value investing while the long-term gain of a company was 100% due to the fundamentals it was attached to. Although there was uncertainty, as shown in the graphs of this sector, investor sentiment remained largely positive towards global investment and a company's fundamentals. This is highlighted in (Keshari & Gautam 2022)[30] study.

The reason behind investors betting on the value of these sectors to go even higher than before and the reason that in pre covid - investors did not see that can be linked to (Mittal & Sharma 2021) study, which showed the significant abnormal returns that the healthcare and pharmaceutical sector gave during the pandemic with most companies of the S&P BSE Healthcare index showing a huge positive deviation in post-pandemic era.[31]

3.2. Gain Type vs Gain Percentage in ESG Reporting Context

As seen in Figure 2, the listing gains for companies not reporting ESG averaged -0.16% compared to ESG-reporting companies averaging -0.78%. In the short term, non-ESG reporting companies gained 13.60%, in fact even outperforming ESG-reporting companies, which gained a lower % at 8.28%. However, ESG reporting companies increased substantially to 20.27% for the long-term metric compared to the low amount of 1.17% for non-reporting companies.

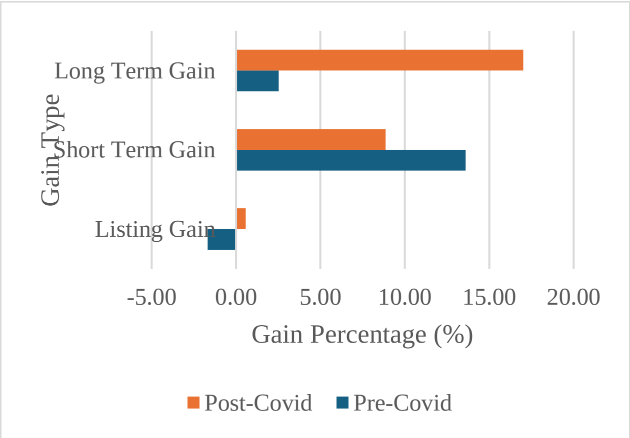

Fig. 2 Graph of gain type vs Gain percentage in esg reporting context

The interpretation of this graph can be that in the short term, non-ESG reporting companies are inclined to perform better, with a short-term gain that is approximately 1.64 times higher than that of ESG-reporting companies. However, in the long term, ESG-reporting companies display a significant shift as they outperform non-reporting companies by 18 times. This indicates that while ESG reporting may not provide immediate benefits, it correlates with stronger long-term performance, likely due to more robust fundamentals and sustainable practices recognized over time.

The short-term metric of non-ESG reporting companies outperforming ESG reporting could be due to investors concentrating on immediate financial returns rather than long-term sustainability, especially in the volatile post-COVID market.[32] However, the substantial long-term gains seen in ESG-reporting companies suggest that their stronger fundamentals, which are normally reflected in ESG practices, become increasingly valued. This aligns with Fu et al. (2022), who found similar long-term benefits in the US market, where ESG reporting improved performance and reduced IPO failure risks. On the other hand, Bollazzi et al. (2017) observed that ESG factors were valued in the Italian market even in the short term, showing differences based on market, region, and geography in how ESG is perceived. The significant 18x multiplier in long-term gains for ESG-reporting companies in this study shows sustainability's growing recognition and importance in emerging markets like India, where ESG awareness is still evolving but gaining importance over time.

3.3. Overall Analysis

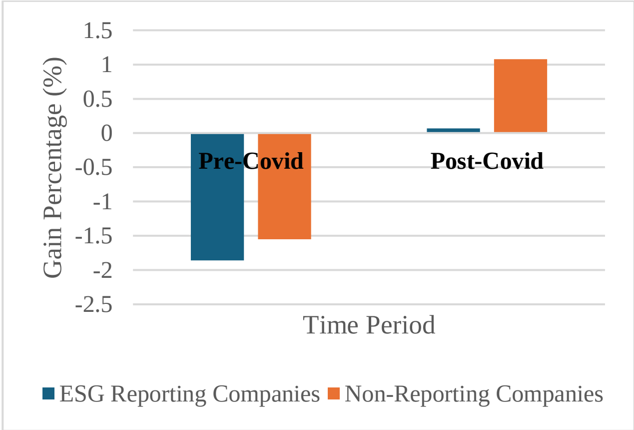

Fig. 3 Listing Gain of ESG vs non-ESG reporting companies in Pre vs Post Covid

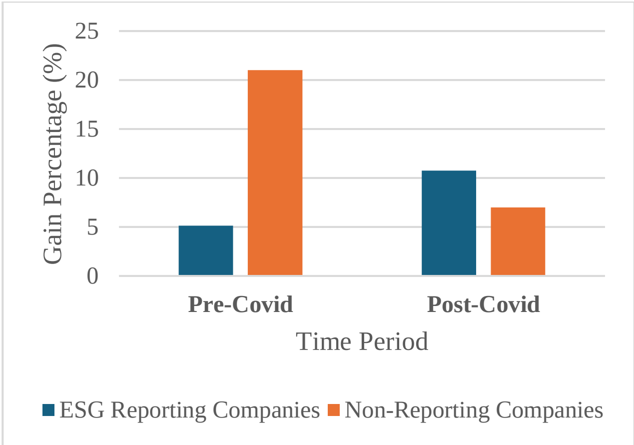

Fig. 4 Short-term Performance of ESG vs non-ESG reporting companies in Pre vs Post Covid

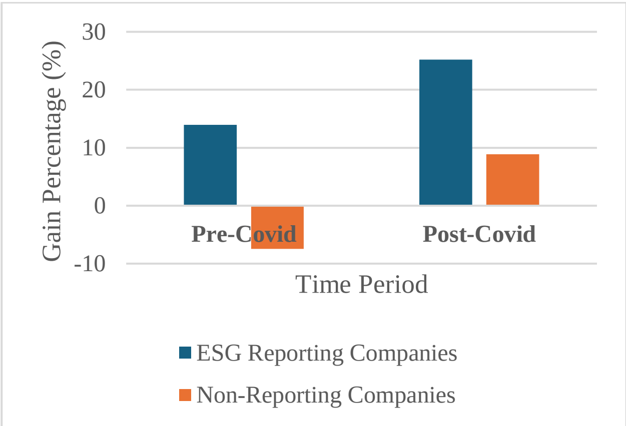

Fig. 5 Long-term performance of ESG vs non-ESG reporting companies in Pre vs Post Covid

In Figure 3, it can be seen that when taking the time period of pre-COVID, the listing gain for ESG reporting companies was -1.86% and -.1.55% for non-ESG reporting companies. When taking the time period to be post-COVID, it can be seen that the listing gain for ESG companies is 0.07% and 1.08% for non-ESG companies.

In Figure 4, the short-term performance of ESG reporting companies in the pre-COVID time period is 5.12%, and for non-ESG reporting companies, it is 21.02%. When looking at the post-COVID period, ESG companies report a 10.24% short-term performance compared to the 7% short-term gain percentage that non-ESG companies churn out.

In Figure 5, the graph reveals the long-term gain percentage of ESG companies to be 13.95% in the pre-COVID era vs -7.47% for non-ESG. In post-COVID, ESG companies turned out to have a long-term gain of 25.19% compared to a mere 8.95% of non-ESG at the same time period.

The analysis of the graphs and results of Figures 3, 4, and 5 go hand in hand with the results in the covid context that was concluded in Figure 1 and results in the ESG context achieved in Figure 2. However, there is an exception, specifically in Figure 4, which gives us further insight into how dramatically the importance of ESG reporting was taken into post covid in the short for the pharmaceutical sector. While Figure 2 shows that companies who reported ESG fared worse overall than non-ESG in short-term performance, Figure 4 highlights and tells us that this was only the condition or truth in pre covid. For post covid, the short-term performance was better for ESG reporting companies compared to non-ESG reporting, but due to the high amount by which non-ESG reporting companies fared better compared to ESG skewed the overall results to favor non-ESG in the short term.

Many reasons can be associated with these findings. One reason for generating these results could be the heavy number of investors that used ESG reporting as a risk mitigation tool in the short term after the pandemic. Another reason could be the heightened investor sentiment shift.

There are many studies that show results that are opposite to the findings achieved, while some align with them. While a (Kaya, 2017) study on the IPOs in the Istanbul Stock Exchange showed high results only on the third day of listing, it also showed no significant relationship between ESG-related factors and short-term performance in the post-pandemic.[33] However, (Ferri et al., 2023) study aligned with these findings in their study of IPOs on the European market, showing that disclosing ESG helps improve short-term performance due to investors thinking it's less risky in post-pandemic.[32]

4. Conclusion

The primary aim of this paper was to measure the impact of ESG reporting on the listing gains in the short-term and the long-term performance of IPOs in the pre and post-COVID eras. The study of 37 IPOs from the pharmaceutical industry listed during the study period from 2016 to 2023 reveals interesting results. While the overall trend ignores the influence of the pandemic, it has been revealed that in the long term, ESG reporting does help increase performance as true nature and values come out. However, for listing gain and short-term performance, it does not impact positively. Considering COVID-19 as a factor, the study reveals that although ESG reporting does not favor short-term performance, the post-covid IPOs who reported ESG were actually favored by short-term and long-term performance, going on to tell the growing focus by investors on transparency and reducing information symmetry.

The findings also reveal decisive trends within the pharmaceutical industry, which has been subjected to significant changes after the pandemic. Pre-COVID, pharmaceutical IPOs generally were characterized by poor listing day performance and worse short-term gains, with ESG-reporting companies performing even worse. However, post-COVID, both ESG-reporting and non-reporting pharmaceutical IPOs showed positive listing gains, with ESG-reporting companies performing distinctly better. This shift in trend emphasizes the broader industry transformation driven by heightened demand for better healthcare, higher investments in this sector, and a greater emphasis and focus on sustainability and corporate responsibility in the aftermath of the pandemic. The paper's discoveries reveal the importance of looking into sector-specific dynamics when evaluating the impact of ESG reporting on IPO performance, which this paper did well but, at the same time, can be seen as a limitation.

The research conducted is important to a variety of different stakeholders. Investors can use the results generated to get insights to tune their investment strategies, recognizing the long-term benefits of ESG reporting while also understanding its very short-term drawbacks and negative turnover. Moreover, policymakers and regulators can leverage this information to shape regulations that encourage sustainable practices in all aspects of the business, from production and manufacturing to environmentally friendly marketing. Additionally, the findings highlight how macroeconomic effects and global events like the pandemic, in this case, can shift market sentiment and influence IPO performance, helping businesses prepare better for upcoming shifts in market trends.

Although this study has many benefits and valuable findings, there do exist some limitations. The research conducted is narrowed to a specific sector. It only takes ESG as a variable, not considering other influencing variables that could potentially change results, such as management strength, sectorial strength, company size, and corporate governance. The time period of the study is relatively short, hence leading to limited data. Future studies trying to expand on this topic could include multiple sectors, markets of other countries, longer time periods, and additional variables.

The recent mandate of the Securities and Exchange Board of India's (SEBI) Business Responsibility and Sustainability Reporting (BRSR) in 2023 will help future research to benefit from more comprehensive and standardized data, which was a major problem in the process of data collection of this study. This mandate will help provide a deeper understanding of ESG's impact on IPO performance in various contexts. This paper sets the basis and framework for future investigations into the evolving landscape of ESG reporting and its implications for market performance. It encourages more detailed and strengthened analyses that can further clarify the relationship between ESG practices and financial outcomes, an answer still unclear in other markets and sectors.

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